OIPE JC88 MAR 29 2004 PATENT & TRADEMARK OFFICE

SPIRIT.001A

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant	:	Howard Barr	Group Art Unit 3644
Appl. No.	:	09/611,177	I hereby certify that this correspondence and all marked attachments are being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on
Filed	:	July 6, 2000	
For	:	GUIDANCE SYSTEM FOR RADIO-CONTROLLED AIRCRAFT	March 25, 2004 (Date)
Examiner	:	Dinh, T.	Michael L. Fuller, Reg. No. 36,516

APPELLANT'S BRIEF

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant in the above-captioned patent application is appealing the final rejection of Claims 18-40, all pending claims in this case, in a final Office Action dated July 1, 2003. Pursuant to 37 C.F.R. § 1.191, the examiner's decision in the patent application is therefore in condition for appeal to the Board of Patent Appeals and Interferences.

Pursuant to 37 C.F.R. § 1.192, this appeal brief is filed in triplicate. A check in the amount of $165 is included herewith for the fee of filing an appeal brief pursuant to 37 C.F.R. § 1.17(c). If for some reason Appellant has not paid sufficient fee for filing this appeal brief, please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

03/30/2004 AWONDAF1 00000087 09611177

01 FC:2402 165.00 OP

I. TABLE OF CONTENTS

II. TABLE OF AUTHORITIES

Statutes

Cases

III. REAL PARTY IN INTEREST

The real party in interest is Spirit Flight Systems, a corporation in the state of Texas, which is the assignee of the above-identified patent application.

IV. RELATED APPEALS & INTERFERENCES

None of the Appellant, Appellant's legal representative, or assignee is aware of any appeal or interference which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

V. STATUS OF CLAIMS

The patent application was filed on July 6, 2000, with a total of 23 claims. In a first Office Action dated October 10, 2001, Claims 2, 3, 8, 12, 13, 16, 17, and 19-23 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Claims 1, 3, 4, 6, 9 and 10 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,725,956 to Jenkins (hereinafter "Jenkins"). Claims 2, 7, 8, 11-14, 16-21 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins in view of U.S. Patent No. 4,206,411 to Meyer (hereinafter "Meyer"). Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins in view of U.S. Patent No. 4,821,572 to Hulsing (hereinafter "Hulsing"). Claims 15 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Jenkins as

modified by Meyer and further in view of Hulsing. In a response filed January 9, 2002, the Appellant cancelled Claims 1-17 and amended Claims 19, 20 and 23.

In a final Office Action mailed April 23, 2002, Claims 27-30, 32 and 33 were rejected under 35 U.S.C. § 112 as being indefinite. Claims 24, 26, 27, 32, 33, 34, 36 and 37 were rejected under 35 U.S.C. § 102(b) as being anticipated by Jenkins. Claims 18-21, 23, 25, 29-31, 35, 39 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins in view of Meyer. In a response filed June 13, 2002 the Appellant amended Claims 18, 27-30 and 32-34.

In an Advisory Action mailed on June 20, 2002, the Examiner indicated that the prior amendments did not put the claims in condition for allowance.

A telephone conference was conducted on July 1, 2002. In a response and Request for Continuing Examination filed July 22, 2002 Appellant amended Claim 18, 23, 24 and 34.

In an Office Action mailed October 2, 2002, Claims 18, 24, 26, 27, 32-34, 36 and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins in view of U.S. Patent 4,964,598 to Berejik (hereinafter "Berejik"). Claims 19-21, 23, 25, 29-31, 35, 39 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins as modified by Berejik, and further in view of Meyer. Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins as modified by Berejik and Meyer and further in view of Husling. Claims 28 and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins as modified by Berejik and further in view of Husling. In a response filed April 2, 2003, Appellant amended Claims 18, 22, 24, 28, 34, 35 and 38.

In a final Office Action mailed July 1, 2003, Claims 18-40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jenkins in view of Berejik, Meyer, and the admitted prior art on page 6 of the application. In a response filed November 26, 2003, the Appellants requested entry of an amendment to Claim 24.

In an Advisory Action mailed February 18, 2004, entry of the amendment to Claim 24 was refused.

In summary, Claims 18-40 stand rejected.

VI. <u>STATUS OF AMENDMENTS</u>

Appellant requested an Amendment to Claim 24 subsequent to the final rejection. Entry of this amendment was refused.

VII. SUMMARY OF INVENTION

Generally, Appellant's invention relates to a flight control system that is incorporated into a remote controlled aircraft. The system is capable of modifying flight control signals sent to the aircraft by a pilot using a remote control transmitter. This flight control system functions by modifying the control signals that are sent by the transmitter in order to control the aircraft's flight.

In one embodiment (with reference to Figure 1) a remote transmitter 20 provides joysticks 22 A,B and buttons 24A-C for sending control signals 25 to the aircraft 30.[1] The aircraft includes a flight control system 100, which is shown more particularly with reference to Figure 2.

The flight control system includes a radio-control receiver 105 for receiving frequency modulated signals from the radio transmitter 20. The frequency modulated signals are then fed into a microcontroller 130 that processes all of the incoming signal data.[2] Also feeding into the microcontroller 130 is a two-axis accelerometer 140 that provides pulse-width modulated signals 142, 144 corresponding to the present X and Y dimensional acceleration of the aircraft 30, which corresponds to the aircraft's pitch and roll. The accelerometer can measure both dynamic acceleration (e.g., vibration) and static acceleration (e.g., gravity).[3]

The microcontroller 130 thus receives input from the receiver 105 and the accelerometer 140. Within the microcontroller 130 are instructions for receiving signals from the accelerometer 140 along with the frequency modulated signals from the radio transmitter 20, and determining the proper output signals to transmit to the aircraft's servos.

One method 400 for determining the proper output signals to send to the aircraft's servos is described with reference to Figure 4. During the process 400, a "zero" switch 150 is activated in order to indicate that the current settings for the aircraft correspond to level flight.[4] The current settings from the accelerometer 140 are then stored to a memory in the microcontroller 130. The aircraft is then launched from the ground and, during flight, the current yaw and pitch of the aircraft are captured by the microcontroller 130 from measurements taken by the

[1] *Spec. at page 5, lines 14-19.*
[2] *Id. at page 6, lines 15-20*
[3] *Id. at page 6, lines 28-31.*

accelerometer 140. Once the yaw and pitch have been captured by the microcontroller 130, and any flight control signals have been received from the transmitter 20, the process 400 moves to a state 420 wherein all of the signals are stored to one of the serial memories 165A,B.[5]

Once the signals have been stored to a memory at the state 420, the process 400 moves to a decision state 425 wherein a determination is made whether the signals coming from the transmitter 20 need to be modified before being sent to the aircraft's servos. This decision process is normally undertaken by instructions within, or communicating with, the microcontroller 130. For example, software instructions and algorithms for analyzing the accelerometer signals and control signals are preferably stored in the PROM of the microcontroller.[6]

A determination to modify the pulse-width of the signals from the transmitter 20 is based on the requested servo positions from the transmitter 20, along with the data input from the accelerometer 140. For example, if the data coming from the transmitter indicates a sharp, diving right turn, the microprocessor may determine based on the yaw and pitch from the accelerometer that such a maneuver might lead to unstable flight or an aircraft crash. If the requested servo positions will place the aircraft outside of a defined performance parameter, the system will determine what signal modifications are needed prior to transmitting the signals to the servos.

The process 400 moves to a process state 430 wherein the control signals are modified prior to being sent to the servos. The process of modifying signals is described more specifically with reference to Figure 5. Once the signals have been modified at the process state 430, the modified signals are stored to the serial memory 165A,B at a state 435. The process 400 then moves to a state 440 wherein the signals are transmitted to the servos and any other aircraft flight control system. Thus, the modified are sent to the servos which thereafter modify the flight path of the aircraft.[7]

---

[4] *Id. at page 9, lines 4-16.*
[5] *Id. at page 9, lines 13-16.*
[6] *Id. at page 9, lines 20-23.*
[7] *Id. at page 10, lines 6-7.*

VIII. <u>ISSUE(S) ON APPEAL</u>

The issues on appeal are whether:

(1) Claims 18-40 are unpatentable under 35 U.S.C. § 103(a) over Jenkins in view of Berejik, Meyer, and the admitted prior art on page 6 of the application.

IX. <u>GROUPING OF CLAIMS</u>

In arguing patentability of the claims, where a number of claims contain features which are believed to be common to these claims and patentable over the art, the claims will be discussed in groups. It is believed that only the following claims of the group stand or fall together:

Claims 18-40

It is to be understood that the above claims of the group only stand or fall together insofar as this particular appeal before the Board apply. It is believed that there are patentable distinctions among all claims.

X. <u>ARGUMENT</u>

A. Appellant's Description of Their Own Invention is Not "Admitted Prior Art".

1. <u>Examiner's Basis for Using the "Admitted Prior Art".</u>

The Examiner stated that:

"The admitted prior art on page 6 discloses two-axis accelerometers that measure a directional component of the acceleration of gravity to determine the current attitude are well known in the art. The admitted prior art on page 6 also discloses the accelerometer that comprises an inclinometer and accelerometers that measure static acceleration.[8] ... It would have been obvious to one skilled in the art at the time the invention was made to have used accelerometers disclosed by the admitted prior arts [sic] on page 6 in Jenkins' system to know the operating status of the flight vehicle and to prevent damage to it.[9]"

2. <u>Appellant's Arguments in Opposition to the Basis for using "admitted prior art"</u>

---

[8] *July 1, 2003 Final O.A., page 3, para 1.*
[9] *July 1, 2003 Final O.A., page 3, para 4.*

The Examiner's arguments are based on Appellant's teaching on page 6 that a two axis accelerometer could be used to measure static acceleration in a flight control system[10]. However, these purported admissions of prior art were taken from directly from Appellant's own detailed description of their invention. The description on page 6 refers to Appellant's description of their own inventive system, as illustrated in Figure 2.

As this description is in the detailed description section of the specification, it is not "admitted prior art", but is rather just the opposite. The description of using accelerometers within a flight control system relates to Appellant's own discovery of the usefulness of such devices to provide guidance control in an aircraft. A proper rejection for obviousness focuses on the claims, and not on what is disclosed in the specification.[11] Thus, these statements by Appellant cannot be properly characterized as "admitted prior art".

3. <u>Summary</u>

In view of the above discussion, it is improper to characterize Appellant's own description of their invention in the specification as "admitted prior art". As such, the combination of Jenkins with Berejik, Meyer and the "admitted prior art" is improper and cannot be used as the basis for a rejection under 35 U.S.C. § 103(a) .

B. There is no Motivation to Combine Jenkins with Berejik, Meyer and the "admitted prior art".

1. <u>Examiner's Basis for Establishing a Motivation to Combine the Teachings of Jenkins with Berejik, Meyer and the "Admitted Prior Art".</u>

The Examiner stated that:

> "Meyers teaches the use of pulse width modulated signals and entering a predetermined flight pattern in case of emergency are well known. Berejik et al teaches [sic] control modules that modifies [sic] control signals to a set of defined performance parameters are well known. The admitted prior art on page 6 discloses that certain types of accelerometers are well known. By combining the above references with Jenkins, Jenkins' flight vehicle will be easier to control and be much safer in prevent [sic] damages. This would be obvious to one skilled in

---

[10] *Spec. at page 6, lines 21 - 31.*

[11] *In re Sovish, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985).*

the art. Taken as a whole, this would lead one skilled in the art to have modified control signals by knowing the positioning signals.[12]

2. Appellant's Arguments in Opposition to the Basis for Motivation to Combine

Appellant respectfully submits that a showing of a suggestion, teaching or motivation to combine the prior art references is an essential component of an obviousness holding.[13] Here, the Examiner did not provide any such motivation to combine the prior art references. The Examiner merely alleged that combining Meyers, Berejik and the "admitted prior art" with Jenkins would make Jenkins flight vehicle easier to control and prevent damage. The only rationale provided by the Examiner was the combination of all these references would "make the Jenkins flight vehicle easier to control and prevent damages". However, this rationale was clearly found by using impermissible hindsight, and with the knowledge of Appellants own specification as a guide. No objective teaching in the prior art is found.

In addition, the Examiner can only satisfy the burden of showing obviousness of the combination by showing an objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art would lead an individual to combine the relevant teachings of the references.[14] Appellant respectfully submits that the Examiner failed to present such objective teaching in the prior art or knowledge generally available to one of ordinary skill in the art.

Furthermore, Appellant submits that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.[15] The Examiner has not shown anywhere in the prior art which suggests the desirability of making such a combination.

Moreover, the Examiner relies upon a teaching taken directly from Appellant's own specification in order to support the rejection for obviousness. However, it is clear that the use of a patent specification to show motivation to make the invention described and claimed in the

---

[12] *July 1, 2003 Final O.A., page 5, para. 2.*
[13] *Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000).*
[14] *In re Fitch, 972 F.2d 1260, 1265, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992).*
[15] *In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).*

specification is improper.[16] Thus, any combination of the accelerometer teachings from the specification with the teachins of Jenkins, Berejik, and Meyer is facially improper.

3. Summary

Appellant respectfully submits that the Examiner failed to satisfy his burden of establishing obviousness because there is no motivation to combine Meyers, Berejik and the "admitted prior art" with Jenkins to arrive at the claimed invention.

C. The Combination of Jenkins with Berejik, Meyer and the "admitted prior art" Does Not Teach or Suggest all of the Limitations of the Claims

1. Examiner's Basis for Combining Jenkins with Berejik, Meyer and the "Admitted Prior Art".

> "Jenkins discloses a control system for a remote-controlled aircraft with a receiver 26, a control module 35 in communication with the receiver to send out signal [sic] to a control flight system, and positioning module 15... The Examiner will introduce the teaching of Berejik et al... to show that control modules that modifies [sic] control signals to a set of defined performance parameters (see figure 3 and columns 4 and 5). The admitted prior art on page 6 discloses two-axis accelerometers that measure a directional component of the acceleration of gravity to determine the current attitude are well known in the art. The admitted prior art on page 6 also discloses the accelerometer that comprises an inclinometer and accelerometers that measure static acceleration.[17] Meyer discloses that pulse-width modulated and signals to change the flight pattern of the aircraft to a predetermined flight patters in case of emergency or any other situations are well known in the art. It would have been obvious to one skilled in the art at the time the invention was made to have made the control module of Jenkins modifies [sic] the control signals to a set of safe defined performance parameters as taught by Berejik et al to allow the aircraft to operate safely without crashing."[18]

2. Appellant's Arguments in Opposition to the Basis for Combining Jenkins with Berejik, Meyer and the "Admitted Prior Art".

To establish a *prima facie* case of obviousness, each and every element of the claim must exist in the prior art and to combine those prior art references, a three-prong test must be met.

---

[16] *In re Oetiker*, 977 F.2d at 1447, 24 USPQ.2d at 1446 (Fed. Cir. 1992) (The motivation to combine references cannot come from the Appellant's specification or invention itself.).
[17] *July 1, 2003 Final O.A., page 3, para 1.*

First, there must be some suggestion or motivation, either in the references or in the knowledge generally available among those of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success found in the prior art. Third, the prior art reference must teach or suggest all the claim limitations.[19]

Appellant's claims relate to a remote controlled aircraft that has an onboard control system to prevent the aircraft from entering an unsafe flight mode. The system reads control signals from a transmitter, reads positioning signals from an accelerometer, and outputs modified control signals to prevent the aircraft from entering a flight pattern that is outside of a set of defined performance parameters, or risks crashing the aircraft.[20] If the control signals will place the aircraft outside a set of predetermined performance parameters, or increase the risk of a crash, the system the modified control signals instruct the aircraft servos to place the aircraft within the defined performance parameters.

Jenkins

Unlike Appellant's claimed system, Jenkins discloses a system for controlling an aircraft from a ground station via a voice interface for the user. The current position of the aircraft is determined by sensors in the aircraft and this positional information is transmitted by an "autopilot system 15" to a ground station for display on the ground station instrumentation. As described, the autopilot system 15 is configured to accept roll, pitch, and yaw rate commands as well as throttle commands and provides airspeed, vertical speed, attitude, turn and slip, altitude, and power data for transmission to the ground subsystem 23 and for display by ground pilot's flight instrument display system 19.[21] Jenkins further teaches that, "data from aircraft motion sensors 33, heading sensor 37 and altitude sensor 39 are transmitted to the ground substation 23 via telemetry transmitter 28."[22] Thus, Jenkins teaches a voice controlled flight system that includes an autopilot which transmits telemetry data to a ground substation for display on ground instrumentation.

---

[18] *July 1, 2003 Final O.A., page 3, para. 1.*
[19] *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991)
[20] *Spec. at Figure 4.*
[21] *Jenkins at col. 3, lines 35-41.*
[22] *Id. at col. 3, lines 42-51.*

Berejik

Berejik, et al. describe an aircraft control system that includes an "automatic pilot" 30 located between the aircraft receiver 20 and the aileron and elevator drives.[23] The automatic pilot 30 includes a rate of turn sensor and a rate of climb sensor[24] that act as negative feedback signals to control the control signals coming from the transmitter.[25] The system simply takes input from the rate of turn sensor and uses it as a negative feedback to the bank angle command from the ground transmitter. Thus, if the aircraft is already engaged in a steep rate of turn, the value from the rate of turn sensor will be high, and it will more greatly reduce a bank angle command, thereby preventing the aircraft from entering too steep of a turn. Similarly, the system takes input from the rate of climb sensor as a negative feedback to the pitch angle command in order to prevent the aircraft from climbing at too steep a rate. No decisions are made in this system. There is simply a negative feedback that affects the rate of turn, or rate of climb, of the aircraft.

Meyer

Meyer describes an emergency system for a remote controlled aircraft that has lost communication with its transmitter.[26] The system includes a safety circuit that is activated when operating signals from the transmitter are not received.[27] The safety circuit replaces the operating signals with preset signals thereby preventing the remote controlled aircraft from crashing if the operating signals are lost.

The Examiner argues that Jenkins discloses a control system for a remote controlled aircraft similar to Appellant's claimed system, except that Jenkins does not explicitly teach a control module that modifies control signals so that the aircraft's flight pattern is within a set of defined performance parameters. The Examiner introduced the teaching of Berejik to show that control modules that modify control signals to a set of defined performance patterns were known in the art. Appellant strongly disagrees.

---

[23] *Berejik at col. 4, lines 54-61.*
[24] *Id. at Figure 4*
[25] *Id. at col. 5, lines 9-22.*
[26] *Meyer at col. 1, lines 32-39.*
[27] *Id. at col. 2, lines 6-19.*

As discussed above, Jenkins does not teach an aircraft control system that modifies control signals. The autopilot system in Jenkins is only used to convert spoken voice commands into aircraft control signals. Moreover, the telemetry data that is collected by the aircraft sensors in the Jenkins system is only transmitted to a set of ground instrumentation. That data is not used to control any aspect of the aircraft's flight. To the contrary, Jenkins specifically teaches away from such use of the telemetry and teaches that the telemetry data generated in the aircraft is only transmitted by the autopilot module to the ground receiver for display on a flight gauge.[28] The telemetry data is never used by the autopilot to position the control surfaces of the aircraft.

The Examiner argues that Berejik teaches the control module that is missing from Jenkins. However, this is not the case. Berejik does not teach a control module that modifies control signals from a transmitter. Accordingly, Berejik provides no teaching of a method or system that utilizes both control signals and positioning signals to keep an aircraft within a set of predefined performance parameters, or prevents the control signals from instructing the aircraft to crash. Berejik only teaches a control module that takes input from a rate of turn sensor, or a rate of climb sensor, and uses that input as a negative feedback to the control signals. There is no measurement of the control signals from the pilot and comparison of those signals with positioning signals to see whether the control signals would place the aircraft outside a set of defined performance parameters. Indeed, Berejik makes no mention whatsoever of comparing control signals from a transmitter to any pre-stored pattern. Thus, the control module disclosed by Berejik does not provide a teaching of the claimed control module, or methods carried out by the control module. For this reason, the combination of Jenkins and Berejik does not teach or suggest all of the limitations of the claims as required by the Examiner in order to properly reject the claims for obviousness.[29]

In addition, Meyer does not add any teaching that would fix this deficiency. Meyer only teaches an emergency flight system that is activated once a transmitter signal becomes weak or missing. There is no disclosure in Meyer of a system that combines control signals and positioning signals to prevent an aircraft from flying outside a set of defined performance parameters. Meyer simply teaches measuring the strength of the transmitted signals, and if they drop below a threshold, they are replaced with stored signals.

---

[28] *Jenkins at col. 3, lines 10-15, 37-41 and 48-51.*
[29] *See Vaeck*

Further, there is no teaching to use an accelerometer within this type of system. The Examiner's assertion that the use of an accelerometer in such a system was known is impermissibly based on the Appellants own description of their invention. Moreover, the introduction of an accelerometer would not be an obvious modification of the cited references since such a component is not used within this art to measure the position of aircraft. Indeed, the position of aircraft are typically measured using a gyroscope, which does not provide the advantages of Applicant's accelerometer.

For example, in order to measure the position of an aircraft using a gyroscope, one must calculate the aircraft's relative position over time as the aircraft travels through space. However, using a accelerometer, Appellants have a devised a system that allows one to store a "zero" setting representing level flight for the aircraft, and thereafter measure the pitch and yaw angle of the aircraft as it moves relative to the "zero" setting. For this reason, such an aircraft maintains an actual position relative to its zero setting, and not a relative position. This provides a tremendous advantage over prior systems, and more accurate positioning of the aircraft.

3. Summary

Neither Jenkins, Berejik nor Meyer teach or suggest a system with the recited control module that uses both control signals and positioning signals to provide modified control signals to prevent an aircraft from straying outside of a predetermined performance parameter, or increase its risk of a crash. Nor is the use of an accelerometer to measure the positioning signals disclosed in the permissible prior art. Accordingly, the combination of these references does not teach or suggest all of the limitations of the claims as required by the Examiner in order to properly reject the claims for obviousness.[30]

[30] *Id.*

XI. <u>CONCLUSION</u>

Appellant submits that the claim limitations discussed above represent only illustrative distinctions from the prior art. There may be other patentable features that distinguish the claimed invention from the prior art. In view of the foregoing, Appellant respectfully submits that all of the pending claims, Claims 18-40 in the present application are in condition for allowance.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: March 25, 2004

By: ______________________

Michael L. Fuller
Registration No. 36,516
Attorney of Record
Customer No. 20,995
(619) 235-8550

APPENDIX A

CLAIMS ON APPEAL:

18. A method of modifying a flight pattern of a remote controlled aircraft onboard said aircraft, comprising:

reading control signals from a transmitter;

reading positioning signals corresponding to a current attitude of said aircraft from two-axis accelerometer that measures a directional component of the acceleration of gravity to determine the current attitude of the aircraft, wherein said positioning signals further comprise pulse width modulated signals;

determining, based on said current attitude, if said control signals will place said aircraft in a flight or pattern outside of a set of defined performance parameters; and

modifying said control signals so that said flight pattern is within said set of defined performance parameters.

19. The method of Claim 18, wherein modifying said control signals comprises modifying said control signals so that said aircraft begins a straight and level flight.

20. The method of Claim 18, wherein modifying said control signals comprises modifying said control signals so that said airplane does not turn with an angle of greater than a preset number of degrees.

21. The method of Claim 20, wherein said preset number of degrees is selected from the group consisting of 20, 30, 40, 50, 60, 70, 80 and 90 degrees.

22. The method of Claim 20, wherein said positioning signals are generated by an accelerometer that comprises an inclinometer.

23. The method of Claim 20, wherein said control signals comprise pulse-width modified signals.

24. A control system in a remote-controlled aircraft, comprising:

a receiver for receiving control signals from a transmitter;

a positioning module comprising an accelerometer that provides positioning signals representing the attitude of said remote control aircraft determined from a directional component of gravitational acceleration; and

a control module that receives said control signals and said positioning signals, and is adapted to output modified control signals to at least one flight control system of

said remote-controlled aircraft based on both said received control signals and said received positioning signals.

25. The control system of Claim 24, wherein said control signals and said modified control signals are pulse-width modulated signals.

26. The control system of Claim 24, wherein said control module comprises a microcontroller or a microprocessor.

27. The control system of Claim 24, wherein said aircraft flight control system is selected from the group consisting of: a servo, an engine, a rudder, an aileron and an elevator.

28. The control system of Claim 24, wherein said positioning module comprises an accelerometer comprising an inclinometer.

29. The control system of Claim 24, wherein said control module is further adapted to provide modified guidance signals to said flight control system that place said aircraft in straight and level flight.

30. The control system of Claim 24, wherein said control module is further adapted to provide modified guidance signals to said at least one flight control system that result in said aircraft entering a predetermined flight pattern.

31. The control system of Claim 24, wherein said modified control signals comprise pulse-width modulated signals that are aligned along a leading edge of said modulated signals.

32. The control system of Claim 24, wherein said control module comprises instructions that are stored in a memory.

33. The control system of Claim 32, wherein said memory is selected from the group consisting of a Random Access Memory (RAM), a Read Only Memory (ROM), an Erasable Programmable Read Only Memory (EPROM) and an Electrically Erasable Programmable Read Only Memory (EEPROM).

34. A system for preventing crashes of a remote controlled aircraft, comprising:

a receiver for receiving control signals from a transmitter;

a positioning module comprising an accelerometer that measures a directional component of the gravitational force to provide positioning signals representing an attitude of the remote controlled aircraft; and

a control module adapted to read said control signals and said positioning signals to output modified control signals to at least one flight control system of said remote controlled aircraft in order to reduce a risk of crashing said aircraft.

35. A system in a remotely controlled aircraft for preventing crashes, comprising:

a receiver for receiving control signals from a transmitter;

a positioning module that provides positioning signals representing an attitude of the remote controlled aircraft by measuring a component of a static acceleration; and

a control module adapted to read said control signals and said positioning signals and further adapted to output modified control signals to at least one flight control system of said remote controlled aircraft in order to reduce a risk of crashing said aircraft.

36. The system of Claim 34, wherein said control module comprises a microcontroller or a microprocessor.

37. The system of Claim 34, wherein said at least one aircraft flight control system is selected from the group consisting of: a servo, an engine, a rudder, an aileron and an elevator.

38. The system of Claim 34, wherein said positioning module comprises an accelerometer that comprises an inclinometer.

39. The system of Claim 34, wherein said modified control signals being sent to said flight control system place said aircraft in straight and level flight.

40. The system of Claim 34, wherein said modified control signals being sent to said flight control system place said aircraft in a level flight circular pattern.